Remarks

The specification has been amended in the manner suggested by the Examiner at page 4, line 8. Applicant regrets any inconvenience.

The Examiner has stated that the Preliminary Amendment sets forth that Claims 1-17 be cancelled and adds new Claims 18-38. The Examiner further states that only Claims 1-15 were originally filed. Accordingly, the Examiner has remembered the claims submitted with the Preliminary Amendment as Claims 18-38 to be Claims 16-36. Enclosed is a copy of the translation that was sent to the Patent Office together with a copy of the return postcard. As can be seen on the return postcard it is stated that there are four pages of 17 numbered claims. Additionally, Applicant also encloses a copy of the original claims from the PCT application which are in German. However, note that there were also 17 claims in the PCT application as originally filed. Applicant regrets any confusion but respectfully submits that in fact 17 claims were submitted and that the preliminary amendment cancelling those claims in favor of Claims 18-38 is accurate.

With respect to paragraph 5 of the Office Action, the Examiner stated that there is no basis in the original specification for the limitation of Claims 35 and 36 which Applicant presumes are Claims 35 and 36 presented with the Preliminary Amendment. Applicant agrees with the Examiner that support for Claims 35 and 36 of the Preliminary Amendment is not present in the application. Accordingly, the specification has been amended on page 7, line 30, to include a paragraph describing the substance of Claims 35 and 36.

Applicant notes the rejection to Claim 16 (18) as containing a period. The present amendment has deleted that period. The error is regretted.

Claims 16-21 and 23-33 stand rejected as obvious over Hurlburt et al, (Hurlburt) as modified by Singleton et al (Singleton). At the outset, Applicant respectfully submits that the Hurlburt reference is not a proper 102(e) reference. In this regard the Examiner's attention is directed to *In re Gostli*, 10 USPQ 2d 1614 (Fed. Cir. 1989) which held that the claims of a U.S. application are entitled to the benefit of the foreign priority date if the foreign application fully supports them as required by the first paragraph of 35 U.S.C. §112. Applicant respectfully submits that that is the case here and that the German priority case fully supports the claims under consideration. Since the priority case was filed prior to the filing date of the Hurlburt patent, it is respectfully submitted that *In re Gustli* is controlling. If requested, Applicants will supply the Examiner with a certified copy of the German priority document including a certified translation thereof to confirm that the disclosure of the German priority document supports the claims under §112.

For the same reasons, Applicants also respectfully submit that Hurlburt is not prior art under 102(f), i.e., the inventors in the captioned application are the first inventors of the subject matter.

Over and above the fact that the Hurlburt is not a valid reference as pointed out above, Applicant's claims, as now amended, clearly distinguish over Hurlburt as modified by Singleton. Claim 18, as amended, recites that the reaction is conducted at a

temperature of above 0°C and not exceeding 90°C. This clearly distinguishes Claim 18 and hence claims dependent thereon over Hurlburt. It should be noted in this regard that the Hurlburt reference in column 2, lines 25 *et seq* teaches that the reaction between the sulphonic acid compound and the alumina is conducted at a temperature from 90 to 300°C which is above the claimed temperature range of 0 to not exceeding 90°C. Support for this temperature limitation can be found in Claim 26 of the preliminary amendment (now cancelled) and as can be seen from the claims of the PCT application it is also found in Claim 5. Nor would it be obvious from the Hurlburt reference to conduct the reaction at a temperature below 90°C particularly since that reference points out that the preferred range is 150 to 250°C. Furthermore, the examples of Hurlburt teach reaction temperatures of 350°F (examples 1, 4, 5 and 6). Clearly Hurlburt teaches a much higher reaction temperature and does not remotely suggest Applicant's claimed temperature range. Further, Applicant's modified metal oxides/aquoxides are dispersible in non-polar organic solvents, albeit that they are also dispersible in polar organic solvents. This is to be distinguished from the Hurlburt reference where it is taught that the modified materials disclosed herein are dispersible only in water and polar organic solvents. It is respectfully submitted that Claims 16-21 and 23-33 are clearly patentable over Hurlburt modified by Singleton.

Claim 16-19, 22-23, 25-27 and 32 stand rejected as anticipated or in the alternative obvious over Redmore et al, optionally in view of Tillman. The rejection is respectfully

traversed. As noted by the Examiner, the process of Redmore is conducted at about 140°C, well above Applicant's claimed range of 0-90°C.

The infirmities of Redmore are not cured by resort to Tillman. The Examiner has cited Tillman simply for its teaching of an alumina having a particle size of less than 250 nm. The Examiner has further stated that the combination of Tillman and Redmore is proper since it would have been obvious to one of skill in the art to employ alumina having a particle size of less than 250nm as a conventional size for use as a fuel oil additive. Applicant respectfully submits that there would be no motivation for the skilled artisan, having read the Redmore patent to consult the Tillman patent simply to pick out an alumina with a particle size of less than 250nm. To begin with, the Tillman reference has absolutely nothing to do with producing modified dispersible aluminas or similar metal oxide compounds which have been treated with certain sulphonic acids. Further, the fact that Tillman teaches that such a particle size may be useful in a additive for fuel oil does nothing to suggest that in the Redmore process the alumina would or should have the claimed particle size. Furthermore, Redmore specifically states in column 2, lines 59-63 that the alumina identified as Dispal is the only alumina which achieves the desirable alumina dispersions. Based on that teaching, what motivation would the skilled artisan have to go to the Tillman reference and pick out an alumina having Applicant's claimed particle size?

It is also notable that Applicant's Claim 18 recites that the metal oxide/aquoxide

produced is substantially non-water dispersible but that it can be dispersed in an organic solvent. No such teaching can be found in Redmore. Lastly it is to be noted that Redmore specifically teaches that to obtain the desirable product, a combination of sulphonic acid and carboxylate acid is superior as opposed to the use of either one oil. Indeed in column 1, lines 49 *et seq* Redmore points out that the process of that invention is distinguished from that of U.S. Patent 3,867,296 by the use of both carboxylate and sulphonic acids. Clearly Applicant's Claim 18 in no way is anticipated nor rendered obvious by Redmore, alone or in combination with Tillman.

Claim 16-21 and 23-35 stand rejected as obvious over Asashi, EP 0736 491 (Asashi). The rejection is respectfully traversed. As amended, Claim 18 requires that the modified product be dispersed in an organic solvent. Asashi does not teach or suggest such an organic dispersible alumina. Indeed, all of the examples of Asashi teach an aqueous sol, there being no suggestion of a modified alumina which can be dispersed into an organic solvent. The Examiner's reliance on page 3, line 17-21 for a teaching that temperatures of 80 to 100°C can be employed are not in point. Applicant does not argue that peptization of the alumina using a sulphonic acid can be conducted at that temperature. However, that is a far cry from Asashi teaching Applicant's process wherein the product produced is dispersible in an organic solvent as now set forth in Claim 18. Simply stated, the product produced by Asashi is totally different than that produced by Applicant. It is respectfully submitted that all claims are patentable over Asashi.

Claim 16 and 36 stand rejected as unpatentable over Nissan. This rejection is likewise respectfully traversed. To begin with Nissan only teaches the use of dodecyl benzene sulphonic acid which is outside the scope of Applicant's claims. Additionally, although alumina is mentioned in paragraph 00010 there are no examples directed to modifying an alumina which can be dispersed in an organic solvent. The single example is directed to zirconia powder of yttria and in that example it is specifically taught that the powder must be ball milled. There is no suggestion of Applicant's claimed particle size and typically ball milling results in particles having a size greater than 500 nm, a size which is outside the scope of Applicant's claims. Applicant's process does not require ball milling or any other such attrition method but rather starts with a metal oxide/metal aquoxide having a particle size of 5 to 500 nm. It is respectfully submitted that all claims are patentable over Nissan.

Applicant's claims are directed to a process and a product which comprises a modified metal oxide/aquoxide which is dispersible in organic solvents including non-polar organic solvent. As to the process claims, the process is clearly distinguishable over Hurlburt and the other references based on the limitation in Claim 18 that the process is conducted at a temperature of from 0 up to at most 90°C. As to the product or product-by-process claims, those claims are distinguishable from the references in that either (a) none of the references teach or suggest a modified metal oxide which is dispersible in organic solvents and/or (b) the prior art products are made by any method remotely resembling

Applicant's process. It is further to be noted that Applicant's claims now recite that the modifier consists essentially of at least one organo sulphonic acid, further defined in Claim 18, a limitation which further distinguishes Applicant's claims from the references. Lastly, Claim 18 has been amended to recite that the modified metal oxide/aquoxide is substantially non-water dispersible. Clearly this is not true with respect to the product produced by Hurlburt or Redmore. Hurlburt specifically teaches that the sulphonic acid modified boehmite is dispersible in water and a like teaching is apparent from reading the Redmore reference.

With respect to the double-patenting rejection as to Claim 16-21 and 25-31, Applicant respectfully submits that since, as pointed out above, the Hurlburt reference modified by Singleton is totally inapposite to Applicant's claims that no such terminal disclaimer is necessary.

In view of the foregoing amendments and remarks, Applicant respectfully submits that all claims are in condition for allowance which is hereby earnestly solicited and respectfully requested.

Respectfully submitted,

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By: _____
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